HD9525LG
Logo Inserter & InstaLogo™

Instruction Manual

EVERTZ MICROSYSTEMS LTD.
5288 John Lucas Drive, Burlington, Ontario, Canada, L7L 5Z9
Phone: 905-335-3700
Fax: 905-335-3573
Internet: Tech Support: eng@evertz.com
Sales: sales@evertz.com
Web Page: http://www.evertz.com

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REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	Preliminary Issue	Jan 99
	Changes made in Chapter 2, pg. 2, 3 & 4	Feb 99
2.0	Update InstaLogo 2.0.2	Jun 99

INFORMATION TO USERS IN EUROPE

NOTE

CISPR 22 CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to the European Union EMC directive. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

INFORMATION TO USERS IN THE U.S.A.

NOTE

FCC CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING

Changes or Modifications not expressly approved by Evertz Microsystems Ltd. could void the user's authority to operate the equipment.

Use of unshielded plugs or cables may cause radiation interference. Properly shielded interface cables with the shield connected to the chassis ground of the device must be used.

Table of Contents

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1. GETTING STARTED

1.1 OVERVIEW

The Evertz HD9525LG Logo Inserter is a complete package that will key one to eight simultaneous static logos over a full bandwidth HDTV program video signal. Logos are stored in non-volatile memory and may be downloaded to the hardware via an RS-232 serial interface.

The HD9525LG has been designed to manage and store multiple logos. The size of each is variable and can be as small as 1/16th of the screen. The position and fade rates of the logo are user controllable. Multiple logos can be keyed simultaneously with independent fade and transparency control for each logo.

Features:

- Store and insert full bandwidth HDTV logos.
- Multiple simultaneous logos can be keyed with each having independent fade and transparency control.
- Incorporates a high quality variable transparency mixer that provides various transparency levels to your logos.
- Full 10 bit linear fade-in and fade-out control provided.
- Front panel, RS-232 remote and GPI contact closure control.
- Download logos from a standard PC.
- Fade to black capability provided on video output.
- Standard system stores more than 31 1/16th screen size logos.
- Automatic input equalization up to 140m of Belden 1694. The cable length specification is 100m if the bypass option is installed.
- Optional bypass relay.
- Optional secondary redundant power supply.
- Optional remote control chassis; desktop and panel mount versions available.

1.2 GETTING HELP

The documentation included with your Logo Inserter includes installation instructions, operating information for each hardware and software feature, troubleshooting information, and a Logo preparation guideline. You can also view the on-line help that is installed with InstaLogo™ for any information that did not make it into print.

InstaLogo™ on-line help is comprehensive and informative and will quickly get you to the right topic. When you are operating InstaLogo™ just press the **F1** key from anywhere you require help. You can also access the on-line Check List by selecting **Help…Check List** from the **Help menu**. The help file is keyword indexed to allow you to easily search for topics of interest and also includes a Contents section for overview and general classification of the help topics.

If you require Technical support from the factory you can contact our technical support department by one of the following methods.

Email	mailto:eng@evertz.com
Fax	**+1 (905) 335-3573**

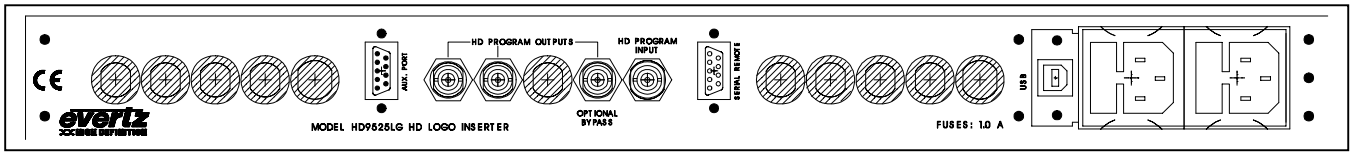
Phone **+1 (905) 335-3700**

In order to expedite answers to your inquiries, please include the version of **InstaLogo**™ you are using. It is available from the **Help/About InstaLogo**™ menu item. Please include a detailed description of the problem you are having.

You can also consult the FTP site (**http://www.evertz.com/ftp.html**) on our web page for the latest patches, upgrades and lists of Frequently Asked Questions.

1.3 FIRST TIME SETUP

1.3.1 Rear Panel Hook Up



Connect the incoming video to the *HD PROG. INPUT,* input connector for serial component SMPTE 292M, SMPTE 274M (1080i) or SMPTE 296M (720p) video.

Connect the main serial digital video output, *HD PROGRAM OUT* to the next device in the video path. There are three BNC connectors which output identical program video compatible with SMPTE 292M, SMPTE 274M (1080i) or SMPTE 296M (720p) video. Optionally one output can be wired as a bypass output.

The *OPTIONAL BYPASS* output (not included with all systems) is the only output BNC that is wired to the optional bypass relay. This output will be connected to the program input in the event of a power failure or a bypass command.

The *SERIAL REMOTE* is an RS-232 serial interface used for updating firmware and loading logos. Connect this using a standard 9pin straight through serial cable, to the PC.

The HD9525LG has a universal power supply that operates on either 115 Volt / 60 Hz or 230 Volt / 50 Hz AC. The power supply auto switches between the voltages. A second redundant power supply purchase option operates in conjunction with the original power supply.

1.3.2 Installing the Software

Insert the first disk or the CD into an appropriate drive on your PC. Select "**Start**"…"**Run**" and type "**A:\setup**" (**note** if you are using a drive other than "**A**" please substitute the appropriate letter) and press the "**Enter**" Key. Once the installation is complete, click on the "**Start**" button and then click "**Programs**". Select the "**Evertz Products**" program group and click on the "**InstaLogo**™ " icon.

You are presented with the **InstaLogo**™ Logo Preparation Screen.

You will need to connect a straight through serial (RS232) cable from the PC to the rear of the Logo Inserter. This cable should not exceed 50 feet and should be connected to the 9 pin Serial Remote port on the Logo Inserter.
Spend some time familiarizing yourself with the software layout. On-line help is available from within the **InstaLogo**™ program by pressing the "**F1**" key. A knowledge of the Windows Operating system is recommended.

If you are running Windows 98 and the latest firmware, you can use the supplied USB cable for Logo transfers instead of the RS232. The transfer rate is much higher, however the cable length is limited to about 15 feet without repeaters.

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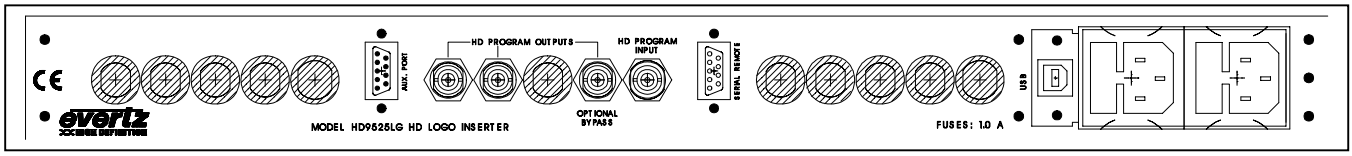
2. HD 9525LG Hardware

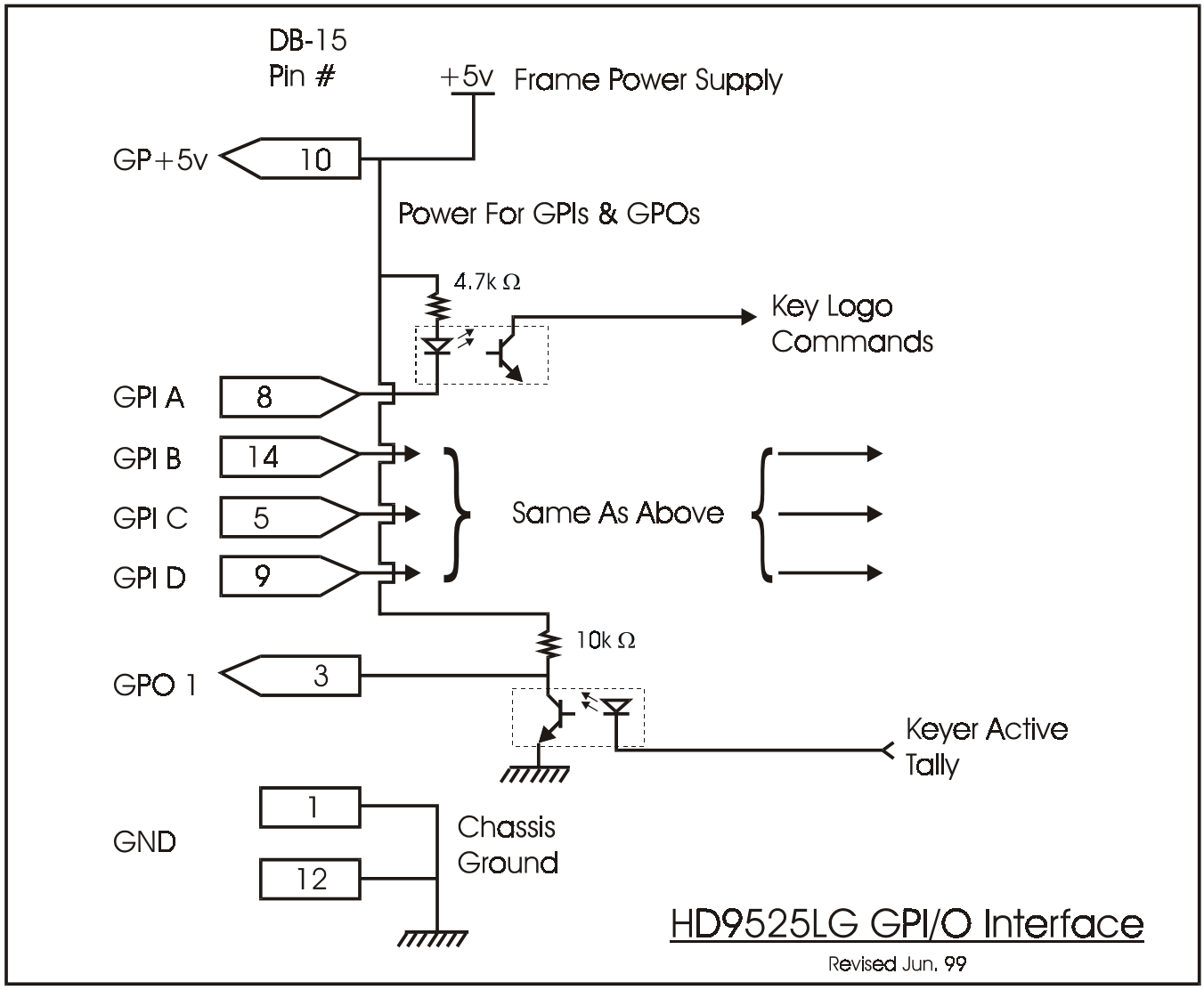
2.1 Rear Panel Overview



- *HD PROG. INPUT,* input connector for serial component SMPTE 292M, SMPTE 274M (1080i) or SMPTE 296M (720p) video.
- The *HD PROGRAM OUT*, is the main serial digital video, output. There are three BNC connectors which output identical program video compatible with SMPTE 292M, SMPTE 274M (1080i) or SMPTE 296M (720p) video. Optionally one output can be wired as a bypass output.
- The *OPTIONAL BYPASS* output is the only output BNC that is wired to the optional bypass relay, if it is installed.
- The *SERIAL REMOTE* is an RS-232 serial interface used for updating firmware and loading logos.
- The *USB* port is for future communications with the PC or other Evertz devices.
- The HD9525LG has a universal power supply that operates on either 115 Volt / 60 Hz or 230 Volt / 50 Hz AC. The power supply auto switches between the voltages. A second redundant power supply is optional and operates in conjunction with the original power supply.
- The "Aux I/O" Connector is used to provide Logo Key commands to the Logo Inserter.

2.2 GPI/O Circuitry and Operation

The following drawing is a simplified schematic illustrating the General Purpose Inputs and Outputs (GPI/O):



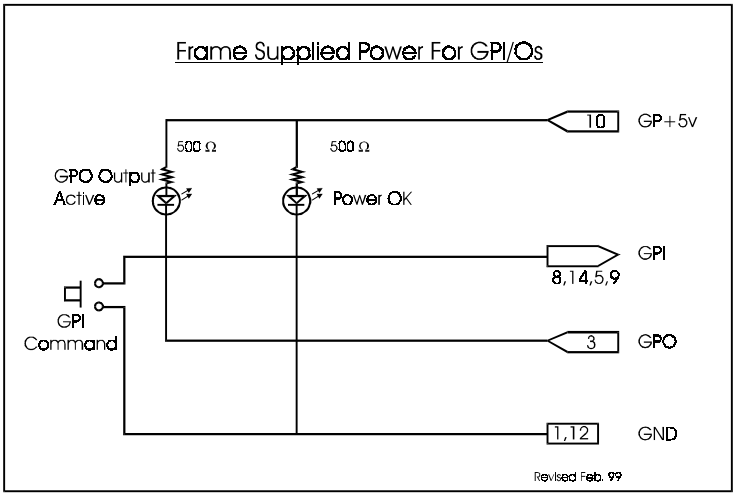
All GPI inputs are level triggered. Connecting the input to ground will fade in and hold the logo on screen. When the input goes high, the command will be removed and the logo will fade out. If the input toggles back and forth between low and high, the logo will fade in and out. If the frequency of the toggling is faster than one frame period, the fade in/out will have a funny behavior. However, once the signal reaches its stable level, the logo will be correctly keyed or not.

HD9525LG "Aux I/O" Pin-Out definition table.

Pin #	Name	Description
1	GND	Chassis ground
2		
3	GPO1	General purpose output
4		
5	GPIC	General purpose input
6		
7		
8	GPIA	General purpose input
9	GPID	General purpose input
10	GP+5V	+5V from general purpose interface board
11		
12	GND	Chassis ground
13		
14	GPIB	General purpose input
15		

Note that the GPI's can be activated, simply by connecting the input to ground. This can be done with a button, switch, relay or an open collector transistor. Five volts is available to the user to be used for driving external circuitry. Care must be taken to not affect the power supply source in the frame. Please limit the load to 0.5W.

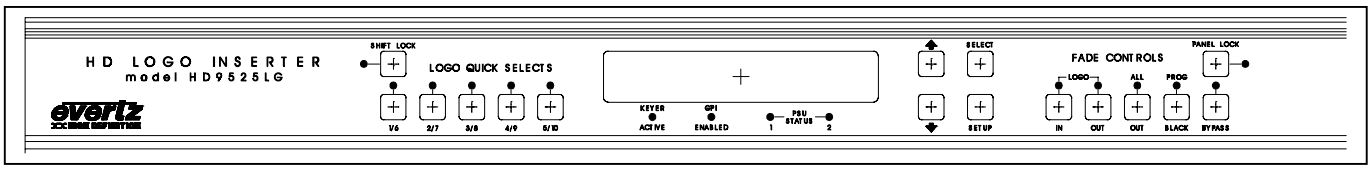
Warning: Do not connect GP+5V from one frame to another frames GP+5V.



There are certain limits that the user must adhere to so that no circuitry is damaged.

Description	Name	Value
maximum GP+5V load	I(GP+5V) max	100mA
minimum input voltage for a high	Vgpi high min	3V
maximum input voltage for a low	Vgpi low max	0.8V
maximum GPO sink current	Igpo max	25mA

2.3 Front Panel Controls



SHIFT LOCK

To access the second bank of quick selects press the shift lock key. The LED to the left of the button illuminates to indicate that shift lock is on. To turn shift lock off press the shift lock button once again. When shift lock is off quick selects 1, 2, 3, 4 and 5 are available. When shift lock is on quick selects 6, 7, 8, 9 and 10 are available. Additionally shift lock is used to invoke turbo mode in the setup menu. Use shift lock to change option values by increments of ten.

Note: If Shift Lock is on when adjusting parameters in the setup menu, it will remain on after exiting the setup mode.

LOGO QUICK SELECTS

Logo quick selects are quick access keys used to access up to ten assigned logos. Pressing the *Logo quick select* button once fades the assigned logo in. Pressing the *Logo quick select* button once again fades the assigned logo out. When a *Logo quick select* is active the LED above the button illuminates. The LED's above each button are used to indicate the status of two *Logo quick selects*. Therefore, when *shift lock* is on, the state of the LED will reflect the status of the second *Logo quick select*.

ARROWS

The arrow keys are used to scroll through the available logos stored within the unit or in the *setup* menu to choose *setup* options and change *setup* option values.

SELECT

Select is similar to the "enter" key on a standard PC keyboard. The button is used to confirm operations, save settings, confirm choices etc.

SETUP

Each logo has independent *setup* options. Use the *arrow* buttons to select the logo you wish to affect prior to entering the *setup* menu.

Press the *setup* button to enter the *setup* menu. Use the *arrow* buttons to cycle through the available *setup* options. Press the *select* button to choose the currently displayed *setup* option; the current value for that *setup* option will be displayed. Use the *arrow* keys to change the value. Press the *select* button to save the change or the *setup* button to cancel the change or exit that *setup* option. Press the *setup* button again to exit the *setup* menu completely. Note: Logos cannot be faded in or out while the *setup* menu is active.

- ***Fade In Time*** – this is the rate at which a logo will fade in. The range for this option is 0 to 600 frames. Note: 1 frame is equal to approximately 33ms.
- ***Hold Time*** – this is the number of frames a logo will be displayed for before automatically being faded out. The range is 0 to 600 frames. Note: 1 frame is equal to approximately 33ms. A value of zero will keep the logo on indefinitely. Note: Only values of 1 through 600 will cause the logo to fade out automatically.
- ***Fade Out Time*** – this is the rate at which a logo will fade out. The range for this option is 0 to 600 frames. Note: 1 frame is equal to approximately 33ms.
-

Transparency – this is the transparency setting for the logo. The range for this option is 0 to 100 units where 100 equals 100% foreground and 0 equals 100% background.
Horizontal – the *horizontal* position of the current logo can be adjusted via this option. The position is referenced to the left most edge of the logo. The range for this option varies depending on video standard selected.
Vertical – the *vertical* position of the current logo can be adjusted via this option. The position is referenced to the top edge of the logo. The range for this option varies depending on video standard selected.
GPI – use the option to assign a *GPI* connection to a specific logo. The assigned logo can be faded in and out using its associated *GPI* connection. There are four *GPI*'s available to choose from. *GPI*'s can be reassigned without having to remove a previous association. *GPO1* is used to indicate the keyer status. *GPO1* is triggered when the *keyer* circuitry is active. The *keyer* circuitry is active when one or more logos is being displayed and during any logo transitions. Valid settings for the GPI are as follows:

None	A	B	C	D

- ***Quick Select*** – use this option to assign a *logo quick select* button to a specific logo. The assigned logo can be faded in and out using the *logo quick select* button. *Logo quick selects* can be reassigned without having to remove a previous association.

- ***Delete*** – use this option to permanently *delete* the currently selected logo from memory. Press the *select* button once to invoke the option. Press the *select* button a second time to confirm the operation. After deleting a Logo, you automatically leave setup mode.

Note: You can not delete a Logo while it is actively keyed, please fade the desired Logo out before attempting to delete it.

System Setup

Standard – used to change the video standard.

Upgrade – used to invoke the firmware upgrade routine. Press the *upgrade* button once to invoke the option. Press the *select* button a second time to confirm the operation. The unit will now expect new firmware to be uploaded via the RS-232 port located on the rear panel. Once the new firmware has been uploaded the frame will perform a quick soft boot and restart. If the firmware hasn't been upload within fifty seconds the *upgrade* routine will time-out and the unit will perform a warm boot.

FADE CONTROLS

- ***in*** – used to *fade in* the currently selected logo.

- ***out*** – used to *fade out* the currently selected logo.

- ***all out*** – used to *fade all* active logos out. The logos will fade out using their individual *fade out time* settings.

- ***prog black*** – used to *fade all* active logos out and then fade the *program video* to black. The logos will fade out using their individual *fade out time* settings. (Not yet implemented)

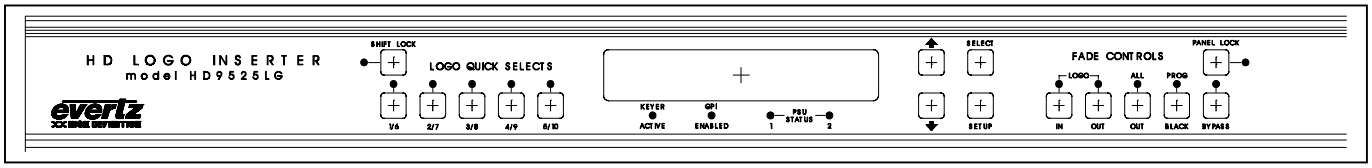
PANEL LOCK

The *LOCK* feature functions as a **global** panel lock. All front panel controls except the *LOCK* button are inhibited when *LOCK* is enabled. Pressing the *LOCK* button will toggle the *LOCK* state *ON* and *OFF*.

BYPASS (if installed)

Pressing the *bypass* button will force the relay on the input of the I/O module to disengage. This will route the incoming video directly out through the relay bypass output connector. The LED above the *Bypass* button illuminates to indicate that the unit is in manual *Bypass*. Pressing the button once again energizes the relay allowing the input video to pass through the Logo Inserter. The *bypass* relay will disengage if the frame loses power preserving the video output stream. Note: Only the *bypass output* connector is *bypass* relay protected, the other two outputs will not function on a power loss.

2.4 Front Panel Indicators



MAIN DISPLAY

This, sixteen character display is used to show menu items, setting values, mode selections etc.

SHIFT LOCK

When illuminated, this LED indicates that the second bank of *Logo quick selects* is accessible. The *Shift Lock* button is used to toggle the state of this indicator.

LOGO QUICK SELECTS

When illuminated these LED's indicate which *Logo quick selects* are currently active.

KEYER ACTIVE

When illuminated, this LED indicates that the *keyer* circuitry is active. The *keyer* circuitry is active when one or more logos is being displayed and during any logo transitions.

GPI ENABLED

When illuminated, this LED indicates that the *GPI* functions are enabled. When disabled, control is via the front panel or optional remote panels only. *GPI* functions can be disabled through the *setup* menu.

PSU STATUS

When the LED is on it indicates that the associated power supply is plugged in and the 12V DC main is functioning.

LOGO IN

Indicates that the current logo is faded in. Both the *Logo in* and *Logo out* LED's will illuminate during the fade process.

LOGO OUT

Indicates that the current logo is faded out. Both the *Logo in* and *Logo out* LED's will illuminate during the fade process.

ALL OUT

Indicates that all logos have been faded out at once via the *Fade all out* button.

PROG BLACK

Indicates that all logos have been faded out at once and the program video has been faded to black via the *Fade prog black* button.

PANEL LOCK

Indicates that the panel is locked. In this state all front panel buttons are disabled except for the *panel lock* button.

BYPASS

Indicates that the unit is in *bypass* mode i.e. the program video is passing directly through the bypass relay to the bypass video output BNC.

3. InstaLogo Software

3.1 Welcome to InstaLogo™

InstaLogo™ is the PC portion of the Evertz Logo Inserter package. The software is used to Import graphic files created from professional graphics programs and transfers them to the Logo Inserter. The software is a utility for converting existing files from RGB to the YCbCr format used in the video domain. The original creation of these files must be done with other software. Once the files are created you can import and convert the files for use with your Evertz Logo Inserter. Please see (Primer on Creating Logos) for more information on the logo creation process.

Here are some guidelines for preparing a logo file to install into the Evertz HD9525LG Logo Inserter:

1. Best results are achieved when you supply both the fill and the key as two separate files. Make sure that the H/V sizes of both files are the same. Make sure that the position of both the fill and the key within the file, is the same.

2. Please draw the logo on a black background.

3. Try to keep the logo under 270 lines by 512 pixels.

4. Anti-alias all edges within the logo. Try to not anti-alias the outer edges (where the keying will take place).

5. Keep all lines thicker than 2 pixels wide, 2 lines high. The line will flicker and/or have funny edge artifacts if they are too thin.

6. Format the logo into a 24 bit per pixel GBR bitmap image.

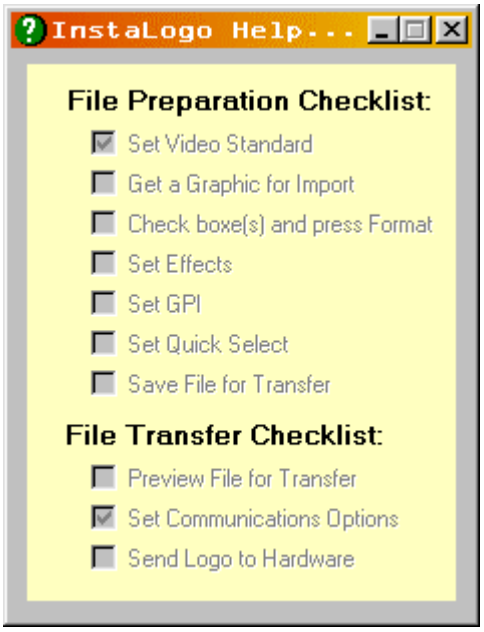
7. Supported files are UNCOMPRESSED: .BMP, .TGA, and .TIFF formats.

8. We are field one dominant and start on a Y/C co-located sample. This means that the first pixel of the first line will be in the first field and the first pixel will be a Y,Cr,Cb co-located sample.

See (Logo Preparation) for more information on Preparing Logos
See (Primer on Creating Logos) for more information on Designing Logos
See (File Utilities) for more information on Transferring Logos to the 9525DSK

3.2 Step by Step Logos

InstaLogo™ includes an online checklist. To view the Checklist, select "Help" from the drop down menus and select "Check List". The steps outlined on the checklist are automatically checked as the steps are completed. For easy Logos follow the checklist from top to bottom.



Checklist Items:

File Preparation Checklist: (see **File Preparation** for more information)

Set Video Standard
Get a Graphic for Import (required)
Check boxe(s) and press Format (required)
Set Effects (optional)
Set GPI (optional)
Set Quick Select (optional)
Save File for Transfer (required)

File Transfer Checklist (see **File Utilities** for more information**)**

Preview File for Transfer (required)
Set Communications Options (default: turbo, Com 1 or USB if enabled)
Send Logo to Hardware (required)

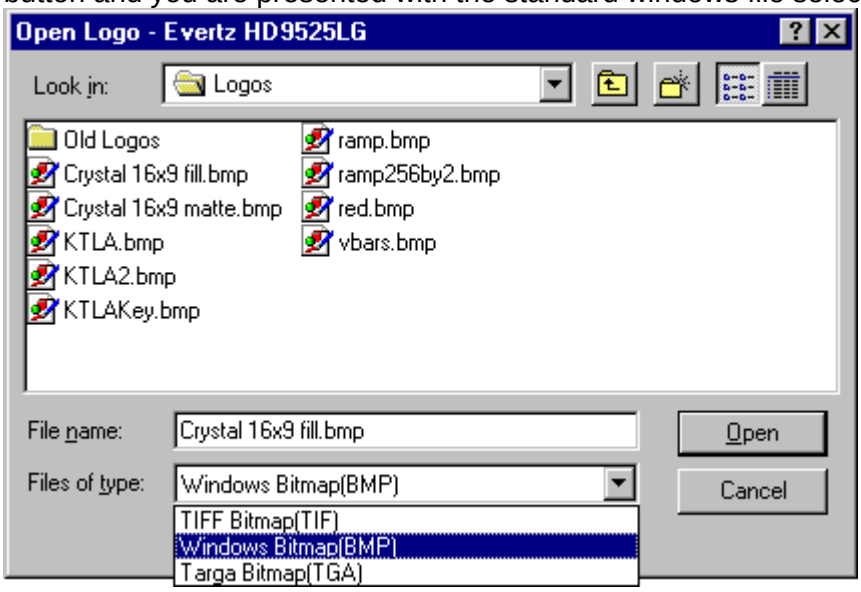
3.3 Logo Preparation

The Logo Preparation page is used for importing graphics files and preparing them for conversion to the Inserter hardware format.

Buttons:

Get Logo: 

Getting a logo is the starting point for the InstaLogo™ program. Click this button and you are presented with the standard windows file selection box.



Simply select your logo file and the software will start the import process. After the Logo file is imported, InstaLogo™ will prompt you to load the associated Key file and again present the standard windows file selection box. When the import process is done you will see your Logo and associated Key displayed in the Logo Preview Section.

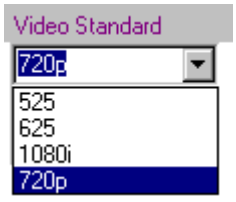
Format Logo: 

Once you have imported and placed your Logo you will need to format it. The process of formatting scales the amount of data to match the amount of data the Logo Inserter is expecting. The original color information and the positioning of the Logo are unaffected by the Format function. If a key file is not supplied then one will be created for you at this time.

Save Logo: 

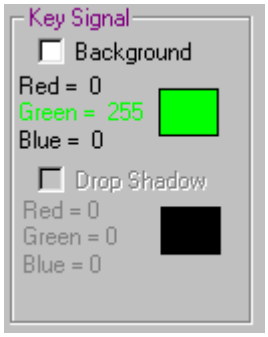
After formatting save your file in the EVL file format. This is the native file format used by the InstaLogo™ software and Logo Inserter hardware. Please note the location of the saved file, as this information is required when sending logos to the Logo Inserter.

Sections:



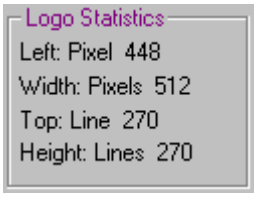
Video Standard: This Drop down menu is used to select the video standard for file creation, changes to this selection change the interface parameters for the Logo Preparation page.

Tools: Toggles the controls on or off for the Logo Preview section.



Key Signal: When a Key file is provided the Background is disabled. When no key file is provided see (Logo Control Menu) for more information.

Fine Positioning: Use the arrow buttons to position your Logo within the Logo Preview area. The “SS” Single Step toggle checkbox is used to lock the logo movement to one sample or line per button click. The “Zoom” checkbox is a new feature for the 1080i/p mode. This toggles the preview area between a 1:1 view mode and a 4:1 view mode allowing you to view the entire HD display area. You may only position your logo prior to formatting. You may also click and drag your logo for placement.



Logo Statistics: Information includes the position of the top left pixel of the imported logo graphic as well as the height and width of the imported graphic.

Logo Preview: This area of the screen is the active work area, use it to place and work on imported graphics as well as view the results of your selections. The height and width of the preview is a 1:1 ratio in normal view mode and 4:1 in “Zoom” mode (1080i/p only) of the selected video format. Therefore a video format of 1080i results in the scaled preview area of 1920 pixels by 1080 lines.

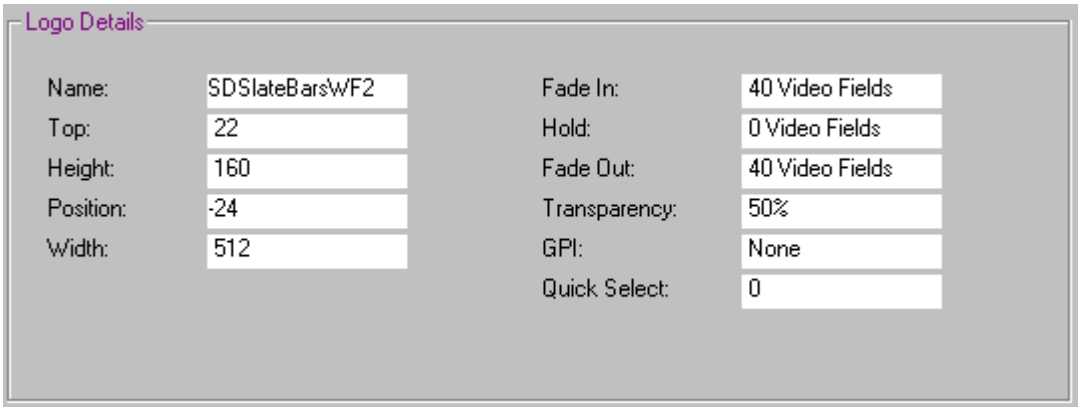
Mouse Co-Ordinates: Pixel positions of the mouse are updated in relation to the object the mouse is passing over and referenced from the top left corner of the object (either background or Logo).

3.4 File Utilities

The file utilities Tab is used to select previously saved EVL files for transfer to the Evertz 9525DSK Logo Inserter. The workspace provides you with a quick view of the important Logo details as well as a double check on the positioning, GPI and Quick Select attributes of the Logo prior to transferring the Logo to the Logo Inserter.

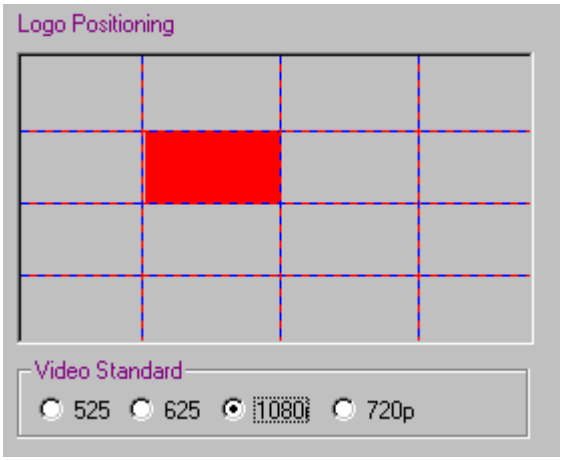
Logo Details:

Display area for the associated Logo details. Ensure that the values in the selected Logo file will not overwrite any Logos in the Logo Inserter before you send the new Logo.

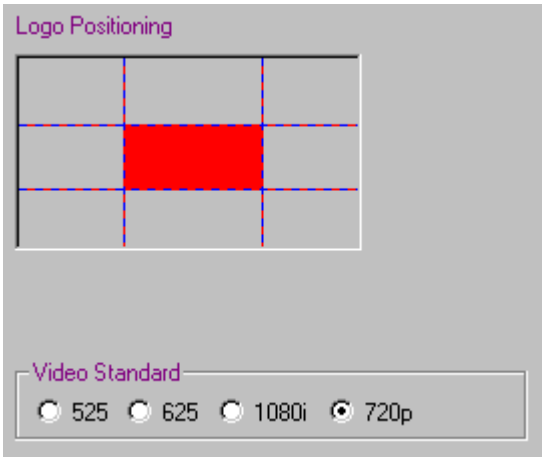


- **Name:** Name of file as saved on the computer file system. This is also the name that the 9525DSK will use on the internal file system. If you would like to change the name ensure that the EVL file extension is maintained.
- **Top:** Top position in scan-lines that the Logo will start to display at.
- **Height:** Number of scan-lines that make up the logo graphic.
- **Position:** The pixel start point for the logo graphic as referenced from the left side of the display area.
- **Width:** The width of the logo graphic measured in pixels.
- **Fade In:** The number of video fields to transition the Logo from off to on.
- **Hold:** The number of video fields to maintain the Logo in the on position.
- **Fade Out:** The number of video fields to transition the Logo from on to off.
- **Transparency:** The maximum intensity percentage (or transparency) to Key the Logo at.
- **GPI:** GPI trigger allocated to the Logo (HD9525LG only).
- **Quick Select:** Front Panel quick select button allocated to the Logo.

Logo Preview: Graphical representation of the size and placement of the Logo with respect to the Video Screen.



(1080i Sample)



(720p Sample)

Buttons:

Preview Select: 

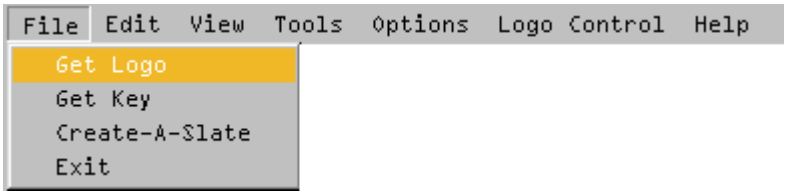
Opens the standard window file selection box and allows you to choose a previously saved EVL file. Once the file is loaded the "Send to Logo Inserter" button will be enabled.

Send to Logo Inserter: 

Initiates the download process that sends the EVL logo file to the Evertz Logo Inserter. The transfer speed is set by the "Speed" settings on the "Options" menu (see Options Menu).

3.5 Menus

3.5.1 File Menu



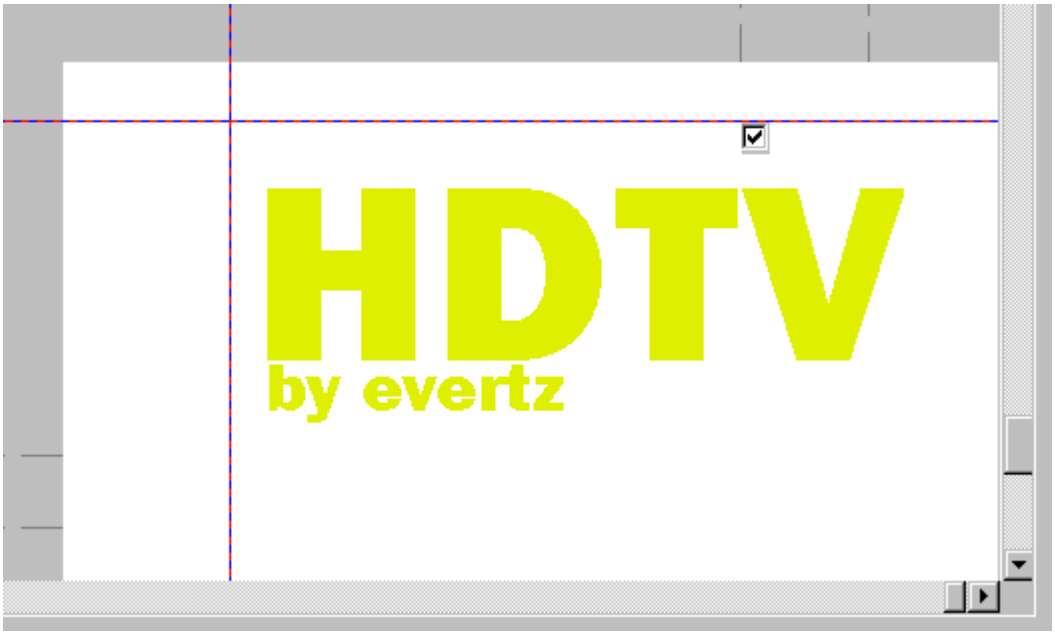
Get Logo: Opens the standard windows file selection box and allows you to import a logo file created with a professional graphics program.
Get Key: Opens the standard windows file selection box and allows you to import a key file. A Logo file must be loaded first.
Create-A-Slate: New Feature for designing Logo based slates (see Create-A-Slate for more information).
Exit: Exits the InstaLogo™ software. Please save your Logo before exiting

3.5.2 Edit Menu

Undo Format: Reverses the effect of a format function. Use this if you are not happy with the placement of your logo or you forget to include a section of the logo when formatting. The formatting of the logo will be reversed and the original logo will be restored to the screen.
Reset Logo: This function moves the active logo from wherever it is to the top left corner of the Logo Preview area and moves the scroll bars to view the top left corner as well.
Delete Logo: Deletes the Logo from the preview window. If a logo is loaded and a new logo is retrieved, the first logo is automatically deleted from the InstaLogo™ software program. Files are not deleted from the hard drive. To delete files from the hard drive use a file manipulation program such as Windows Explorer™.

3.5.3 View Menu

Unformatted and Selected:



This is an example of an imported graphic. This file has been placed, however the Logo is larger than the allowable limits and must be formatted to the proper size. To format a graphic you must first select the portion of the graphic that you want to use as your logo. You do this by clicking on the checkbox located at the top center of each grid. Please check mark all the sections that you want. You must also tell the software that the white color is the background and should be transparent when it gets converted to a logo. Right Click on a white portion of the Logo to open the Logo Control menu or select it from the drop down menus at the top of the screen. Select "Key Color" from the menu options and the Key Signal area will be updated to reflect your color selection. Click on the Format Logo button and InstaLogo™ will create your key and fill files as well as adjust the size of the graphic.

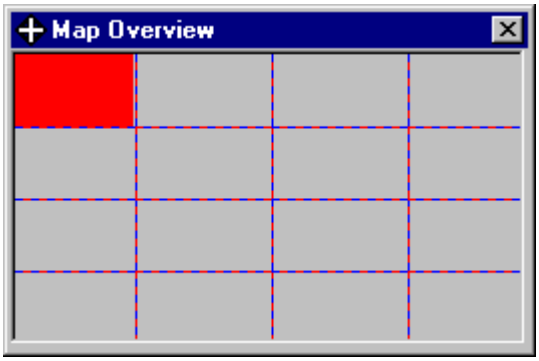
Note: Logo positioning can be adjusted from the front panel of the Inserter.

Key Only: Changes the display of the Logo Preview area to the Key data of the logo only. This will result in a grayscale image displayed on the screen. Illustrated as follows

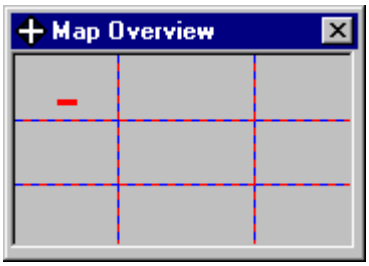
Fill Only: Changes the display of the Logo Preview area to the fill data of the logo only. This will result in a full color image as it was created in your professional graphics program (Differences between the original graphic and the newly created fill graphic will result if a key file was not supplied). Illustrated as follows.

Key Fill: Changes the display of the Logo Preview area to a mix of the fill and key data. This will result in a full color image displayed on the screen mixed with the black background. Illustrated as follows.

Map Overview: Displays a scaled overview of the HD active picture area. Also displayed on the map is your logo as well as the grid lines.

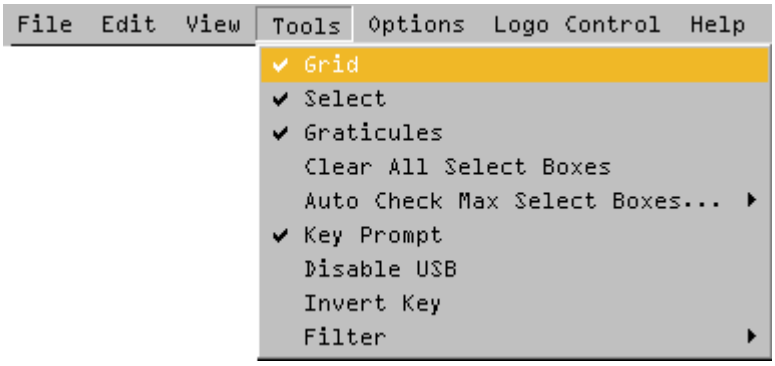


1080i



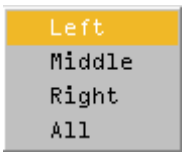
720p

3.5.4 Tools Menu

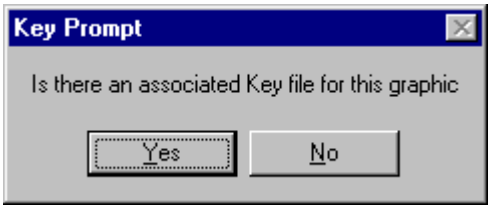


Note: A check mark beside a menu item means the item is active, on, or enabled.

Grid: Turns on or off the Grid squares in the logo preview area.
Select: Turns the selection boxes on or off in the logo preview area.
Graticules: Turns on or off the display of the graticules in the logo preview area.
Clear All Select Boxes: Turns off all select check boxes in the Preview Logo area.
Auto Check Max Select Boxes….: Allows you to quickly select logical areas of the Preview Logo screen for formatting into the logo for transfer the options are as follows:



	Video Standard			
	525	625	720p	1080i/p
Left-	Left most column	Left most column	Left most column	Left 2 columns
Middle-	Middle column	Middle column	Middle column	Middle 2 columns
Right-	Right most column	Right most column	Right most column	Right 2 columns
All-	All columns	All columns	Not Applicable	Not Applicable

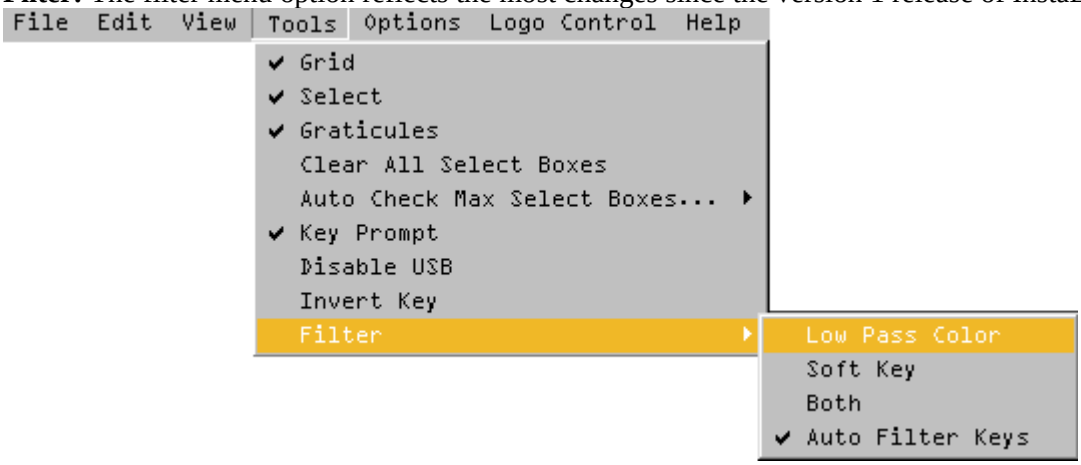
Key Prompt: 

Turns on or off the "Prompt for Key file" that occurs when a logo is retrieved from the hard drive.

Disable USB: This menu item will only be enabled (not grayed out) if the system is running Windows 98 and the PC is connected to the DSK unit via the USB cable provided. You must also have the most current firmware in the DSK unit as well as this version of InstaLogo. This menu item is a toggle button to enable or disable the USB transfer capabilities. It is not recommended that you change this setting.

Invert Key: Inverts the associated Key data. Use this function if the Key file supplied was created with the fill area black and the background white.

Filter: The filter menu option reflects the most changes since the version 1 release of InstaLogo.



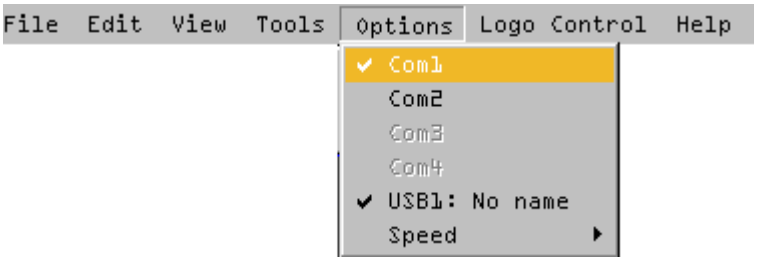
Low Pass Color: This multi-pass filter may be applied to any imported graphic file. The filter analyzes the color values for every pixel in the image and smoothes the color transitions from one pixel to the next. If you have a multi-color graphic file, you should apply this filter to ensure color transitions stay within the allowable limits. This filter may be applied as many times as you like, however the fine details in the graphic will diminish with each successive pass of the filter.

Soft Key: This one-pass filter smoothes the transition points from Background to Fill. If you have selected a Key Signal Color for your graphic and you want to create a transparent type Logo, you should apply this filter to the Key. InstaLogo will automatically apply this filter where appropriate as long as the Auto Filter Keys is enabled. If you supply a separate key file along with you Logo fill, you may still have to apply this filter. Refer to the Primer on Creation Quality Logos at the end of this manual.

Both: This option applies both the Low Pass Color filter and the Soft Key filter.

Auto Filter Keys: This toggle switch enables or disables the application of the soft key filter. If you disable the filter you will experience hard transition points from background to fill and the logo will appear to crawl around the edges. InstaLogo remembers the state of this button even if you close the program. It is recommended that you don't change this setting.

3.5.5 Options Menu

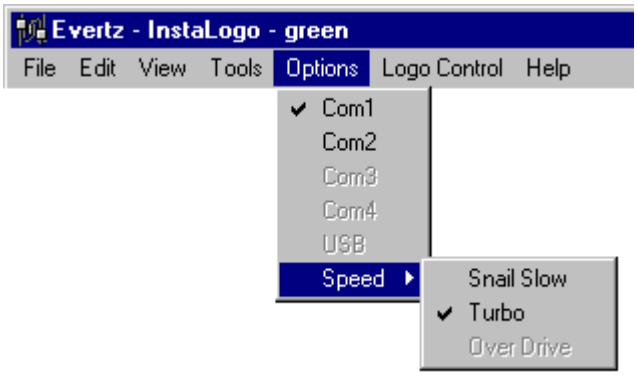


InstaLogo™ automatically detects the communications ports installed in the PC when the program starts (to a maximum of 4). If the menu for the port is "Grayed Out" it means that there is a device already using the port or the port is not installed in the PC. Please select the appropriate port prior to downloading logos to the Logo Inserter. It is possible for a port to be tied up when InstaLogo™ starts and then be released after, however InstaLogo™ only checks the port status when the program starts, so you will be required to restart the software in order to make the newly freed port available.

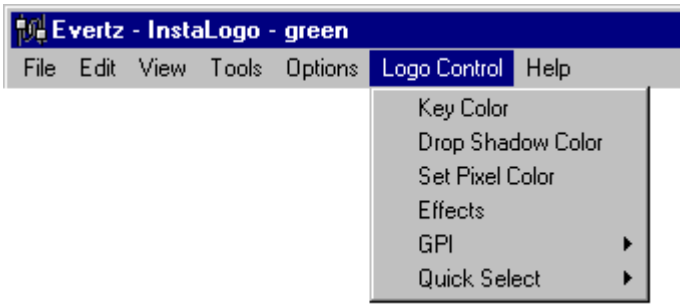
A standard 9 pin straight through serial (RS232) cable is required (see Rear Panel Hook Up).

Com1: (Default setting)
Com2:
Com3:
Com4:
USB: (Default setting if using Windows98 and current firmware)

Speed:



Snail Slow: Download speed of approximately 9600 bps
Turbo: Download speed of approximately 57,600 bps (Default setting)
Over Drive: Download speed of approximately 12 Mbps (Default USB)



The Logo Control Menu is used to control the aspects of the format function and effects related to the Logo display.

Note: after loading a Logo you can "Right Click" on the Logo to gain quick access to the Logo Control Menu.

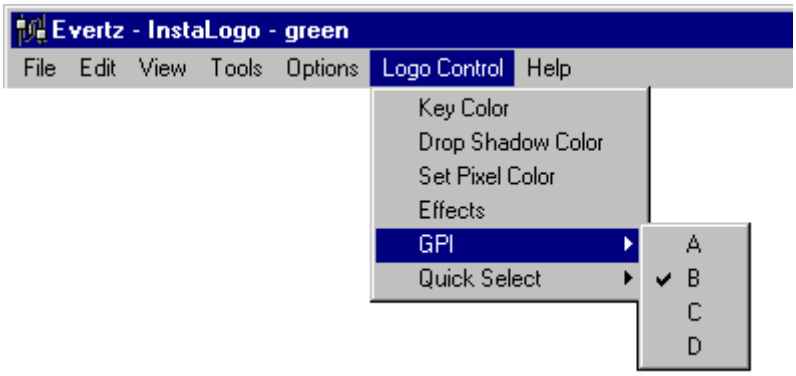
Key Color: Select Key Color to set the background color for the format function. The easiest way to do this is to point to the desired background color with the mouse and "Right Click" on the Logo, then select the Key Color option. Ensure that the Key Color only appears at places that you want full transparency with respect to the video. If your background color appears anywhere in the Logo Graphic it will also be considered as background and dropped out of the Logo. If you supply a Key file you do not have to select the Key Color.

Drop Shadow Color: Disabled in version 2.0.2 of InstaLogo. If you require a Drop Shadow effect with your Logo, please create a separate key file with your graphics package and import both the key and fill files separately. Refer to the Primer on creating quality logos at the end of this document for more information.

Set Pixel Color: Set Pixel Color is used to modify your imported Logo Graphic. If there is a pixel that is not the right color you may select a color using Key Color and then set the Target pixel to the Key Color using this option. This function is meant only for minor pixel fixes, and any major fixes should be done in your professional graphics program that you originally created the Logo file with. Temporarily disabled in version 2.0.2. For now fix the color problem in your graphics program and re-import the Logo file.

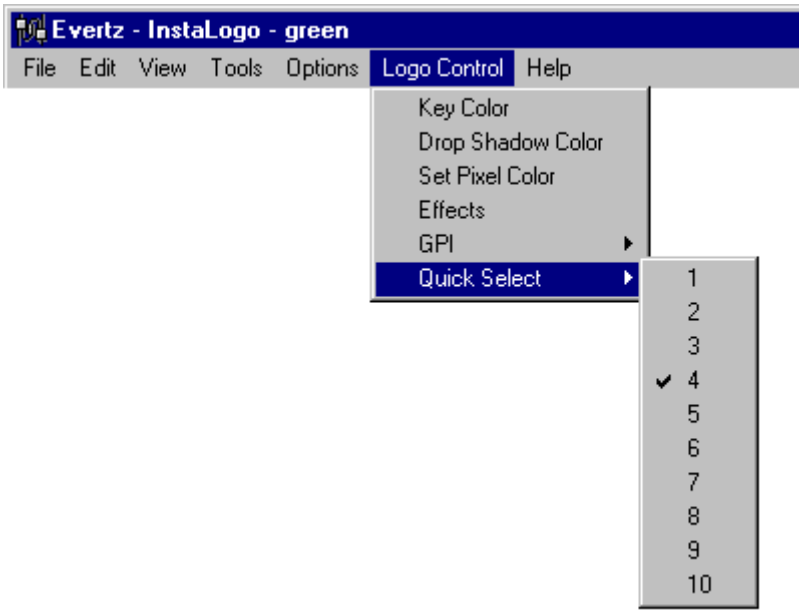
Effects: Selecting Effects allows you to control the display aspects of the Logo after the Logo is downloaded to the Logo Inserter. See (Effects) for more information.

GPI:



This fly out menu allows you to select the GPI trigger (see Rear Panel Hook Up) for the Logo. If you download a Logo to the Inserter with a GPI that is already allocated to an existing Logo, the original GPI will be replaced by the newly downloaded Logo. The original Logo will remain in the Logo Inserter however it will not have a GPI assignment. Valid options are A, B, C, D. and None. The GPI can be reallocated from the front panel of the Logo Inserter. (Option only valid for HD9525LG) For GPI assignments for the DSK-LG please review the On-screen menu section of this document.

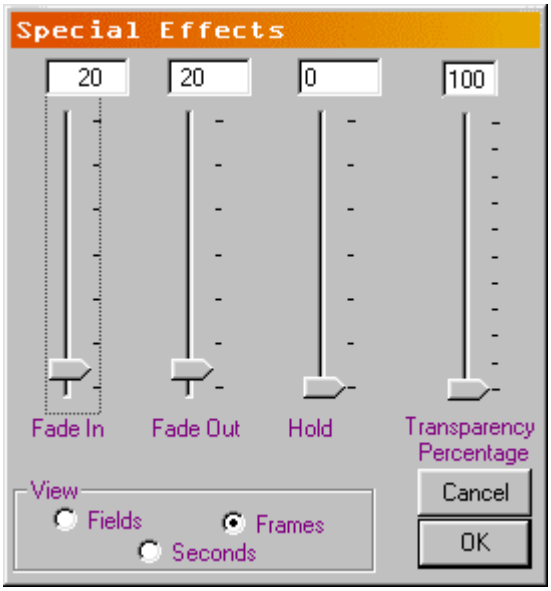
Quick Select:



This fly out menu allows you to associate a Logo with a Quick Select button (see Front Panel Controls) on the front panel of the Logo Inserter. Valid Options are 1 through 10. If a Logo is already assigned to the particular Quick Select button, the newly downloaded Logo will replace the originally defined Quick Select. The original Logo will still remain in the Logo Inserter however it will not have a Quick Select assignment. Quick Selects can be re-assigned from the front panel setup mode of the Logo Inserter. (Option only valid for the HD9525LG product or models equipped with Quick Select keys)

3.6 Miscellaneous

3.6.1 Effects



Fade In: This setting controls the length of time it takes for a Logo to display on the video screen. A setting of zero will make the Logo "pop" on the screen, and a longer setting will make the Logo fade in more slowly.

Fade Out: This setting controls the length of time it takes for a Logo to dissolve from the video screen. A setting of zero will make the Logo "pop" off the screen, and a longer setting will make the Logo appear to slowly fade away.

Hold: This setting controls the length of time the Logo is displayed on the video screen. A setting of zero will hold the Logo on until the Fade Out button is pushed or a GPI goes inactive.

Transparency: This setting controls the maximum Transparency level of the Logo Graphic. A setting of 100% means the Logo is fully keyed over the background video.

View: The view settings change the text display boxes at the top of the three Special Effects control bars. They apply to Fade In, Fade Out, and Hold. The valid settings are as follows.

Field: maximum of 600.
Frames: maximum of 300.
Seconds: maximum of 10.

Buttons:

OK: Accepts the Special Effects settings and closes the window.
Cancel: Discards all changes made and closes the Special Effects window.

3.6.2 Status Bar

The Status bar is located at the bottom of the application and is only visible when the application is maximized. The information displayed is intended for troubleshooting and user verification only.

The Status bar has three sections. The first section shows the Com port, Baud rate, and Settings for the communications port. These settings are changed during the download process depending on the speed settings selected from the Options dropdown. The status bar will not reflect these changes.

The second and third sections contain a visual reference as well as a textual description of the status of particular functions in the program. Please refer to the following table for a description of the status bar items.

Green: Status OK or process complete.
Yellow: Status processing.
Red: Status busy, do not interrupt.

Message	Color
"Data Converted"	Green
"File Transfer Enabled"	Green
"Formatting Logo"	Red
"Getting Key"	Red
"Getting Key Signal Data"	Yellow
"Getting Logo"	Red
"Getting Logo Pixel Data"	Yellow
"Interlacing Pixel Data"	Yellow
"Key Retrieved"	Green
"Logo Data Created"	Green
"Logo Data Pack Sent"	Yellow
"Logo Reformatted"	Green
"Logo Retrieved"	Green
"Logo Sent"	Green
"Selection Not Correct"	Yellow
"Writing Logo Data"	Red

3.6.3 Error Messages

MsgBox "Logo File " & Filename & " Transferred." The file was sent to the Logo Inserter Successfully.

MsgBox "Hardware Memory Error, Please delete older logo's before sending new one's. Error 01." There are too many files in the Logo Inserter to load another one. Please delete one before sending a new one (see delete in the index).

MsgBox "Error writing " & Filename & " to flash. Error 02." There was an error writing the Logo data to the Logo Inserter file system try sending the Logo again, if the problem persists please contact Evertz Customer Service.

MsgBox "Error Closing " & Filename & " Error 03." There was an error writing the Logo data to the File system of the Logo Inserter. Delete an older file and try sending the Logo again, if the problem persists please contact Evertz Customer Service.

MsgBox "Error in communications, Retransmission failed. Retry transfer at slower speed, or fade out Logos" The maximum retransmission level was exceeded. This could be due to a bad cable a corrupt Com port or a hardware problem with the Logo Inserter. Fade the Logos out to free up Inserter processor time or change the transmission speed to a slower level. See Speed in the Index for more information.

MsgBox "Problem with communications Protocol Reset detected." Communications between the Logo Inserter and the PC were interrupted. Try transferring the Logo again at a slower speed. If the problem persists Please contact Evertz Customer Service.

MsgBox "Unknown Device, Check Communications" InstaLogo™ can't understand the data from the device connected to the Comm port. Verify that the Logo Inserter is connected to the same port specified in the Options drop down menu. See Options in the Index for more information. Also verify that the cabling is correct.

MsgBox "Error establishing communications, Please check connections" InstaLogo™ can't understand the data from the device connected to the Comm port. Verify that the Logo Inserter is connected to the same port specified in the Options drop down menu. See Options in the Index for more information. Also verify that the cabling is correct, and that the Logo Inserter is powered on.

MsgBox "Not a Valid …, or File Corrupt" The file you attempted to open may have a valid file extension but does not contain valid data or the file data is corrupt. Obtain a new file and try again, or convert your data to one of the other supported file types.

MsgBox "Key File must be the same width as Fill File." Associated files must be of the same size and type. All key and fill files must be 24bit and have the same file sizes.

MsgBox "Key File must be the same height as Fill File." Associated files must be of the same size and type. All key and fill files must be 24bit and have the same file sizes.

MsgBox "Only Uncompressed … files are supported at this time, Please contact Evertz for an upgrade. " Some compression algorithms lose data. Please use uncompressed files only.

MsgBox "Import failed, error reading file" There was a problem reading the file. Please try again or obtain a new copy of the file.

MsgBox "Please select a section of the Logo to Format" You must select a section of the graphic before you attempt to format the graphic. Click on the check box(s) in the section(s) you wish to format.

MsgBox "Please Get a Logo to Format" You must load a Logo before you can format it. Please refer to the Primer on Creating Logos included with this document.

MsgBox "Improper selection, Selection must be 1 or 2 boxes wide only" Your current version of the Hardware supports keying of Logo that are 1024 pixels wide at most. This means you may only select 2 box widths in the 720p or 1080i modes.

MsgBox "Please Format Logo to ensure size compliance before Save Function." You must format your Logo prior to saving the Logo in the YCbCr format. Please refer to the Primer on Creating Logos included with this document.

MsgBox "Standard not supported" The current version of the software does not support the selected standard. Please select a different standard.

MsgBox "Current com port selection is not valid" The com port specified on the options menu is invalid. Please check your com port and restart InstaLogo™.

MsgBox "Key already loaded, Please get a new Logo" You may only associate one Key file with one Fill file. If you would like to associate a new key file, reload your original Fill file.

MsgBox "Port not functioning, please try another port" The select port is not responding, Please choose another port from the Options menu.

MsgBox "File Extension not Recognized" You have selected a file with an unrecognized file extension, Please see file formats in the Index for more information.

MsgBox "Only Evertz Logo Files may be transferred at this time. Please ensure the file has an .evl extension." Please ensure that the file extension of the saved Logo files is .EVL all other file extensions will be ignored.

If you receive any errors referring to “DIB” try using a PC with a PCI or AGP video card. Version 2.0.2 of InstaLogo uses Raster Operations for image manipulation. The ROP functions are included in the Windows API and will function on all versions of Windows, however these functions rely on the underlying hardware. If your video card is not capable of a given function it will attempt the function anyway or return a “DIB” error to InstaLogo. Please contact Evertz technical support if you have any further questions.

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4. Logo Design Primer

4.1 Primer on Creating Logos

Thank you for choosing the Evertz Logo Inserter as a method of displaying logos and other graphical information in standard/high definition video. The Evertz Logo Inserter hardware does the keying and displaying of the logo, but it is you (or your art department) that is responsible for composing the artwork. Unfortunately, what the artist sees as they are composing the image is not necessarily what the final product will look like when it is keyed into and displayed on video. This chapter introduces the user to some basic principles associated with keying graphical information on video. It will also give some guidelines when preparing logos to get the best quality possible.

The Evertz **InstaLogo**™ software takes your artwork, will format it, and will send it to the Logo Inserter hardware. This paper will describe the images (and key images) that you are to deliver to the **InstaLogo**™ software. If you are already familiar with image drawing and preparation for use on video, please review the summary at the end of this chapter.

4.2 Introduction

To take an image and insert it into video two things are needed. One is the image or artwork to be displayed, which we will call the "fill", and the other is a funny looking black and white image that is used to tell the hardware where to display the image and where to display the background or video signal. This latter image is called a "key". Where the key is black, the video signal will be visible. Where it is white, the fill will be visible. Grey areas will display a "mixed" value that is partially the background video and partially the logo image depending on the brightness of the key's gray.

4.3 Types of Keys

The **InstaLogo**™ software can take an image and extract a key signal out of the image based on a color that you select as the background color. This is called "chroma keying" because the color that you select will be the used to create the key. The software takes an image and a color that you select and will create a key that is either black (in areas where the image matches your selected color) or white (otherwise). The resulting key is a black and white image with hard edges between the background/foreground. This is called a "hard key" because of the resulting hard edge between fill and background. The **InstaLogo**™ software will "soften" the edges so as to not violate any video bandwidth restrictions (more on this later).

This "self key" technique may work fine for simple, few color images, but if the background has subtle changes or it bleeds into the foreground image, the edge between the background and fill will be jagged and will not always follow the contour of the fill.

For better results the user can supply a key image that is created at the same time as the artwork with the keying effect in mind. Copying the fill image and converting the foreground area to a gray level that is proportional to the desired mix value creates a key. Softening (sloping) the edges of the key will in turn control the "hardness" of the background/fill transition. The key file must have the following characteristics:

1. It must be the same H and V size as the fill.
2. The image in the key file must have the same H and V location as the image in the fill file.
3. The file formats must be the same.
4. The key file must be black and white only. This means that Red, Green and Blue must have the same numbers, everywhere in the file.

4.4 Translucency and Drop Shadows

Many times it is desirable to have the whole logo or an area of the logo translucent. This means that both the fill and background are visible in a mixed proportion (i.e. 60% fill and 40% background). For instance, a drop shadow around an object consists of a background mixed with a color (usually dark gray). Don't worry about getting the overall transparency correct when you design the artwork. The overall transparency of the logo can be adjusted in three places: in the original key image, in the **InstaLogo**™ software and in the Evertz Logo Inserter hardware. You will, however, achieve the best results when the original key has the proper scaling, particularly when there are various regions of differing translucency.

If you are drawing separate key and fill, you can create translucent regions by placing gray over the desired areas. Remember that bright gray will include more fill than background and dark gray will include more background.

If your artwork does not have an associated key file, in the **InstaLogo**™ software, you can select a color to use as a match color (chroma key). All areas of the logo with this color will have a translucent/drop shadow effect. Of course it is up to the artist to ensure that the drop shadow color only exists in the areas where a translucent effect is desired. Otherwise you will get holes in the fill in areas that are not intended. If you want more than one degree of translucency in the same logo, you must use separate key and fill files. For these reasons, it is recommended to always use separate key and fill files.

4.5 File Formats

Modern graphics and images can come in a wide variety of file formats. What is the best for this application? First of all, images are only as good as their source. A highly compressed JPEG image, or a 4 bpp (4 bits or 16 colors per pixel) will not have the same quality as a full color (24 bpp) image. The most accurate (to the final representation when being displayed in video) format is a RGB image (as compared to CMYK or a lossy compressed format).

The **InstaLogo**™ can handle Tiff, TGA, and BMP files formats. All files must be saved with 24bit color values. These were picked to guide the user to use file formats that give the best results. Try to keep the original artwork in a format as close to these as possible.

4.6 Sharp Edges and Skinny Lines

The final product, when combined with the video, has certain limitations that are not present when the artwork was created with today's modern graphics software. Although sharp edges (or fast color changes) and small skinny lines can be created and displayed on a computer monitor, they may not look as good after being put on video and displayed on a regular TV monitor. The artifacts will be flickering on horizontal lines, banding on vertical edges or a combination on diagonal edges. This is due to limitations that exist in video that are different from the computer world (this is beyond the scope of this help file). For example, if you draw a simple image using Windows Paint™ the result will have illegal edges as described. If you use higher-end drawing packages, they will have an option to turn on that will automatically smooth edges between the different areas of the drawing (this may be called "Anti-Aliasing" or "Feathering"). To make sure that the image has properly shaped edges, zoom way in on a sharp edge. Make sure that there are at least 2 pixels (horizontally and vertically) of transition between the two areas.

The above also puts a limit on the smallest size that an object can take. A small 1 pixel wide line can not be properly reproduced. Make sure that all lines are at least 2 pixels wide and that their edges are also shaped.

4.7 How Big Do I Draw the Logo

One of the first questions asked when designing a logo is "how big?" should it be and "how do I draw it so that it is the size that I intend it to be when loaded into the Logo Inserter hardware and displayed on a monitor". To figure this out, you need to know how big the total picture is and how big the logo is that you intend the insert. For example, high definition video picture area is about 1000 lines high and 2000 pixels wide. If you want to insert a logo that is 1/32 the size of the picture, then you should draw an image that is 1000/32=32 lines high and 2000/32=63 pixels wide. Configure your drawing package to give you a drawing area of this size before you start.

Warning: Drawing images bigger or smaller and then re-scaling will not give as good a result as drawing them at the proper 1:1 scaled size. The mathematical process of squeezing/expanding may create unacceptable results, particularly on edges.

The Logo Inserter hardware has minimum image memory sizes. If you stay within one memory block size, you will maximize the number of logos that you can hold in the hardware. The minimum size is 512 pixels wide by 270 pixels high for the 1080i version of the Logo Inserter.

4.8 How Do I Position the Logo

Try to position the logo as close to the actual insertion point as you can at the time that you import your artwork. You can use the **InstaLogo**™ software to roughly position the logo on the screen and once you download the logo into the hardware, you can fine-tune the position using the front panel controls.

4.9 Edges Between the Fill and Background

There are a couple of artifacts that can occur on the edge between a logo and the background that are not obvious at first but if you know about them you can draw the image knowing how to avoid them.

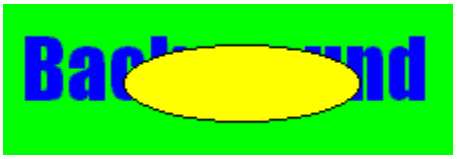
The best way to illustrate is with illustrations!

If we have a background like this:

a fill like this:

and a key like this:

we get the fill over the background with a black boarder outlining the fill like this:



This happens because the fill image has a transition from the fill color to black and it overlaps the key that also has a transition (from the fill to the background). A small portion of the black around the fill shape sneaks through at the transition edge. This may or may not be a desirable effect.

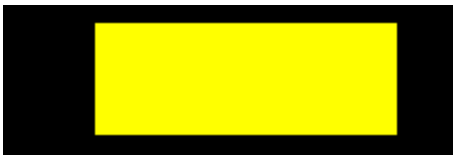
A word of warning about using this technique to create a boarder; if the fill has a shaped but sharp edge and the key has a shaped but sharp edge, the resulting image will have an overly sharp edge and edge ringing artifacts as described earlier may occur! This is due to the fact that the key ends up shaping the already shaped edge creating an even faster edge.

If the above does not produce the desired result, you can do this:

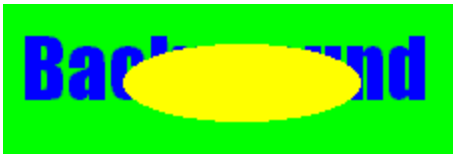
Take a background like this:

a key like this:

a fill that is bigger than the key, like this:



we get the fill without the black boarder like this:



We can use this approach because the key ends up providing the proper edge shape to the fill.

If you are not providing a key file, it is hard to get rid of an edge effect. A technique for doing this is to surround the fill with a color that is just slightly different, but unique, from the image. Rather than having black, or some contrasting color peeking around the image, you will get a subtle color difference that will not be visible.

4.10 Summary: Primer for Creating Logos

Here is a summary of some of the guidelines presented here for preparing a logo file to install into the Evertz family of Logo Inserters:

1. Best results are achieved when you supply both the fill and the key as two separate files.
2. Make sure that the H/V sizes of both the fill and key files are the same.
3. Make sure that the position of both the fill and the key within the file, is the same.
4. Make sure that the key file only contains luminance values (i.e. R=G=B).
5. Please draw the logo on a background that is close to, but distinct from, the edge of the logo.
6. Draw logos 1:1 (i.e. do not resize after drawing).
7. Try to keep the logo under the size of one block of memory. This will save memory space in the Logo Inserter hardware (512 pixels wide by 270 pixels high).Anti-alias all edges within the logo. Try to not anti-alias the outer edges (where the keying will take place). This will create a logo without a black boarder.
8. Keep all lines thicker than 2 pixels wide, 2 lines high. The line will flicker and/or have funny edge artifacts if they are too thin.
9. Format the logo and key into a 24 bit per pixel RGB bitmap image.
10. We are field one dominant and start on a Y/C co-located sample. This means that the first pixel of the first line will be in the first field and the first pixel will be a Y,Cr,Cb co-located sample.

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Index